



Wind Power, South Africa

Renewable Energy project for Jeffrey's bay in the Eastern Cape, South Africa

The 180 MW wind project is located in the Jeffrey's Bay is proposed near Jeffrey's Bay within the Kouga municipal area north of the town in the Eastern Cape Province.

The facility is proposed on the coastal plateau inland of the towns of Humansdorp and Jeffrey's Bay. The facility will cover several farms, the majority of which are located immediately inland of the N2 highway, with the project area being approximately 5km north-west from the closest inhabited residential area of Wavecrest, at Jeffrey's Bay.

Jeffrey's bay is famous for its world class surfing, and the area is largely driven by tourism and agriculture, which is both private landowners and emerging farmers focused on dairy and crop production.

At a local scale, this wind energy project will contribute to improved energy stability and security of supply. The project objective is therefore twofold: (i) to meet national Renewable and Climate change targets; and (ii) to provide additional generation capacity for export via the grid to the country and surrounding areas of the Eastern Cape, such as the Nelson Mandela Metropole.

The project will create employment in an area where there is a scarcity of jobs and assist with the sustainability criteria for the country and region.

Project objectives

Develop, design, engineer, procure, construct, operate and maintain a 180 MW wind farm producing renewable Energy on to the South African grid.

Support local communities through the creation of 1-2 jobs per MW and skills development in the region.

Increase Renewable Energy generation capacity and contribute to SA's renewable energy target

Increase Energy security



**MAINSTREAM
RENEWABLE POWER
SOUTH AFRICA**

A joint venture with Genesis Eco-Energy

The project is being developed by Mainstream Renewable Power South Africa which is a joint Venture between Mainstream Renewable Power ("Mainstream"), a global renewable energy company based in Dublin (Ireland), and Genesis Eco-Energy, an empowered South African renewable energy developer.



Technical information

- 40 to 85 turbines (number dependent on capacity of turbines selected in the range between 2,3 and 3 MW), with an expected hub height in the range 80 - 100 m and a blade diameter in the range 70 m to 120 m.
- Turbines to be supported on reinforced concrete foundations of size anticipated to be maximum 20m x 20m x 2.5 m depth.
- 5% of farmland will be allocated to the turbines.
- Capacity factor of average of 32% (P50)
- A new sub-station (maximum compound size 90 m x 120 m) and transformer to the 132 kV Eskom grid will be built. The substation will preferably be located close to the 132 kV line.

The Environmental Impact assessment for the first 16 MW of the project has received a successful record of Decision from the Department of Environment. Following the increase in the anticipated capacity of the project a new EIA is underway. This study has been done by the Council for Scientific and Industrial Research.

A wide range of turbine options are being considered for Jeffrey's Bay. These include several leading names in the turbine market. Local content where possible will influence this selection.

The impact of the wind farm is felt on the overall economic development potential in the area through a localised power source supporting the infrastructure in the area. Further there are direct impacts on commercial enterprises nearby the

site, in particular the export fruit industry and the dairy production hub, that have previously been affected by power failures that will have a new reliable power supply.

Impacts will also be felt in relation to project expenditure on direct and indirect employment and household incomes.

This project is working with local communities and development agencies to ensure a fit with local, regional and national economic development visions and plans.

Local landowners with turbines on their land will receive revenue from the Wind farm, with an emerging farming group being one of the key beneficiaries of this revenue.

The long-term P50 energy yield for the proposed wind farm is estimated to be 533.3 GWh per annum based. The avoided Carbon Emissions annually will save approximately 420,000 tonnes of Carbon dioxide from being released into the atmosphere.

The Avoided Water Usage each year will be approximately 604 million litres of water being consumed if you use the coal baseline that defines the South African power market.

A Letter of No Objections from the Designated National Authority relating to this project has been obtained, and it is being developed as a clean development mechanism project and supports renewable energy and sustainable development goals.

Features

1. Approximately 420,000 tonnes of Carbon dioxide is being reduced
2. Developing the rural economy through rentals, job creation, securing power supply and increased infrastructure
3. 604 million litres of water reduced from coal baseline
4. Additional SO₂, NO₂ N₂O and Ash pollution avoided
5. Local skills development and job creation in rural area from development through to construction and ongoing operations
6. Focus on local empowerment both in ownership and in services

Contact details

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